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September 12, 1994

Mr. William F. Caton, Acting Secretary
Federal Communications Commission
1919 M Street, N.W.
Washington, D.C. 20054

In re: ET Docket No. 93-62
The Ericsson Corporation

Dear Mr. Caton:

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

On January 25, 1994 and April 25, 1994 The Ericsson Corporation ("Ericsson") submitted comments and reply comments, respectively, in the *Notice of Proposed Rule Making* in above-referenced proceeding relating, in part, to the categorical exclusion of low power hand held devices based on an interpretation of the "2.5 cm rule" of the ANSI/IEEE Standard for RF exposure.¹

Ericsson noted that the ANSI/IEEE Standard provides a categorical exclusion for low power devices if (1) radiated power is below a certain level and (2) the radiating structure of the RF device is "maintained" more than 2.5 cm from the body. To the extent the radiating structure of the RF device is maintained less than 2.5 cm from the body the low power exclusion is not available. In that event compliance with the ANSI/IEEE Standard must be demonstrated by conducting the problematical SAR tests. Based on the lack of specificity on how one conducts SAR tests, the increased use of low power hand held devices in today's society, and its belief that the "2.5 cm" rule was not intended to apply to hand held devices, Ericsson requested that the Commission refrain from adopting low power exclusion rules until the 2.5 cm rule could be further interpreted.² To assist in obtaining information the Commission could evaluate, Ericsson submitted to IEEE's C95.1-1991 SC-4 Committee a formal request for an

¹ ANSI/IEEE C95.1-1992, *Safety Levels With Respect to Human Exposure to Radio Frequency Electromagnetic Fields*, 3 kHz to 300 GHz, approved September 26, 1991 by IEEE, published April 27, 1992 by IEEE (hereinafter referred to as "ANSI/IEEE Standard"), Sections 4.2.1.1 and 4.2.2.1.

² See, "Comments of The Ericsson Corporation", pp. 9-10 and "Reply Comments of The Ericsson Corporation", pp. 7-10.

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interpretation of the meaning of the phrase "maintained within 2.5 cm of the body".³ Ericsson recently received a response to its inquiry, a copy of which is attached hereto and made a part hereof. In its response IEEE states:

....Subcommittee 4 did not intend to exempt from the exclusion clause hand-held devices where the radiating structure may be within 2.5 cm of the head some of the time. The paragraphs in 4.2.1.1 and 4.2.2.1 that start with 'This exclusion does not apply...' was directed to the use of devices worn on the body with radiating structures maintained within 2.5 cm of the torso:....

Because recognized experts in the field who drafted the language of the 2.5 cm rule have now made it clear that the phrase "maintained within 2.5 cm of the body" applies to devices worn on the body, the Commission should adopt a rule which provides a categorical exclusion for low power hand held devices based on radiated power alone. As a corollary, the Commission should specifically refrain from adopting a rule which requires an entity to conduct SAR tests to determine if low power hand held devices comply with the ANSI/IEEE Standard when the device is maintained within 2.5 cm of the body inasmuch as hand held devices were never intended to be included in the category of devices subject to the 2.5 cm rule.

Ericsson submits that such actions will adequately protect the public on the one

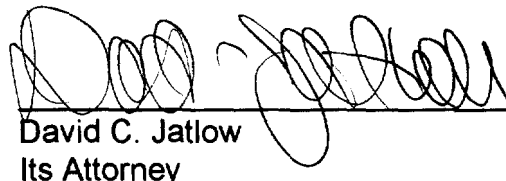
³ A copy of Ericsson's request for interpretation was submitted to its January 25, 1994 comments as Attachment I.

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hand and, on the other hand, will allow the speedy deployment of wireless services which are based on the use of low power hand held devices.

Respectfully submitted,

The Ericsson Corporation



David C. Jatlow
Its Attorney

cc: All Commissioners
Mr. Richard Smith
Dr. Thomas P. Stanley
Mr. Robert Cleveland
All Parties Of Record in Docket 93-62

**IEEE**

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SC-5

Safety Levels with Respect to
Electro-Explosive Devices

June 22, 1994

Mr. William J. Blackburn
Manager, Regulatory Programs
Ericsson GE Mobile Communications, Inc.
Mountain View Road
Lynchburg, VA 24502

Dear Mr. Blackburn:

This is in response to your request for an interpretation of certain statements in the low-power device exclusions (Sections 4.2.1.1 and 4.2.2.1) of the ANSI/IEEE C95.1-1992 standard. Specifically, the Interpretations Working Group was asked to respond to the following questions:

1. What is the definition of the term "radiated power" as used to define the exclusion for low-power devices, and
2. What is the meaning of the term "maintained" as used to define devices that are not included in the low-power device exclusion.

With respect to the first question, the term "radiated power," as applied to devices subject to the provisions of the low-power device exclusion, means the total power radiated into free space *in absence* of objects that may cause scattering, e.g., "radiated power" excludes effects caused by the presence of the user's hand or head.

With respect to the second question, Subcommittee 4 did not intend to exempt from the exclusion clause hand-held devices where the radiating structure may be within 2.5 cm of the head some of the time. The paragraphs in 4.2.1.1 and 4.2.2.1 that start with "This exclusion does not apply ..." was directed to the use of devices worn on the body with radiating structures maintained within 2.5 cm of the torso.

Evidence supporting this interpretation is found in Section 6.10 (2) of the Rationale. The statement "Laboratory studies have shown that it is unlikely for devices such as low-power hand-held radios (where the radiating structure is not maintained 2.5 cm or less from the body) to expose the user in excess of the exclusion criterion..." makes it clear that the clause "maintained within 2.5 cm of the body" was not intended to apply to low power hand-held radio transceivers.

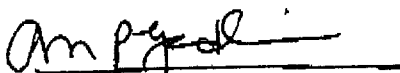
This response has been prepared and approved by a SC-4 Interpretations Working Group consisting of the cochairs and 9 other members. We hope we have provided appropriate answers to your questions.

Sincerely,



Eleanor R. Adair

Cochairman, Subcommittee 4



Om P. Gandhi

Cochairman, Subcommittee 4

ERA/ss

Copy to

K. DeChino - IEEE

T. F. Budinger

A. W. Guy

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